

SandRidge Energy

Comanche County (KS27S)

Sec 34-T33S-R17W

Carlisle 3317 2-27H

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

01 November, 2012

Wolverine Directional, LLC

Survey Report

Company: SandRidge Energy	Local Co-ordinate Reference: Well Carlisle 3317 2-27H
Project: Comanche County (KS27S)	TVD Reference: WELL @ 0.0ft (Original Well Elev)
Site: Sec 34-T33S-R17W	MD Reference: WELL @ 0.0ft (Original Well Elev)
Well: Carlisle 3317 2-27H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 2003.21 Single User Db

Design Wellbore #1				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0		
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	359.27

Survey Program		Date 11/01/12		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
1,041.0	9,862.0	MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,041.0	1.30	69.20	1,040.9	4.2	11.0	4.1	0.12	0.12	0.00	
First MWD Survey										
1,231.0	0.90	108.40	1,230.9	4.5	14.5	4.3	0.44	-0.21	20.63	
1,517.0	0.70	98.20	1,516.8	3.5	18.3	3.3	0.09	-0.07	-3.57	
1,993.0	0.90	63.20	1,992.8	4.8	24.5	4.5	0.11	0.04	-7.35	
2,469.0	0.50	333.20	2,468.8	8.3	26.9	8.0	0.22	-0.08	-18.91	
2,944.0	0.70	327.20	2,943.8	12.6	24.4	12.3	0.04	0.04	-1.26	
3,514.0	0.90	356.40	3,513.7	20.0	22.3	19.7	0.08	0.04	5.12	
3,896.0	0.70	5.70	3,895.7	25.3	22.3	25.1	0.06	-0.05	2.43	
3,991.0	0.30	343.40	3,990.7	26.2	22.3	25.9	0.46	-0.42	-23.47	
4,086.0	0.10	345.40	4,085.7	26.5	22.2	26.2	0.21	-0.21	2.11	
4,181.0	0.50	350.00	4,180.7	27.0	22.1	26.7	0.42	0.42	4.84	
4,213.0	0.50	342.00	4,212.7	27.2	22.1	26.9	0.22	0.00	-25.00	
4,245.0	2.10	2.90	4,244.6	28.0	22.0	27.7	5.13	5.00	65.31	
4,277.0	4.70	4.30	4,276.6	29.8	22.2	29.6	8.13	8.13	4.38	
4,309.0	6.80	4.00	4,308.4	33.0	22.4	32.8	6.56	6.56	-0.94	
4,340.0	8.80	3.20	4,339.1	37.2	22.7	36.9	6.46	6.45	-2.58	
4,372.0	10.60	0.80	4,370.7	42.6	22.8	42.3	5.76	5.63	-7.50	
4,404.0	12.80	0.50	4,402.0	49.1	22.9	48.8	6.88	6.88	-0.94	
4,435.0	15.10	0.80	4,432.1	56.6	23.0	56.3	7.42	7.42	0.97	
4,467.0	18.00	2.10	4,462.8	65.7	23.2	65.4	9.14	9.06	4.06	
4,499.0	21.00	1.20	4,492.9	76.4	23.5	76.1	9.42	9.38	-2.81	
4,531.0	23.30	0.40	4,522.6	88.4	23.7	88.1	7.25	7.19	-2.50	
4,562.0	25.40	359.50	4,550.8	101.2	23.7	100.9	6.88	6.77	-2.90	
4,594.0	27.40	358.70	4,579.5	115.4	23.5	115.1	6.35	6.25	-2.50	
4,626.0	29.50	359.90	4,607.6	130.7	23.3	130.4	6.80	6.56	3.75	
4,657.0	31.10	359.70	4,634.4	146.3	23.2	146.0	5.17	5.16	-0.65	
4,689.0	32.60	359.00	4,661.5	163.2	23.0	162.9	4.83	4.69	-2.19	
4,721.0	34.40	358.80	4,688.2	180.9	22.7	180.6	5.64	5.63	-0.63	
4,753.0	35.40	357.00	4,714.5	199.2	22.0	198.9	4.49	3.13	-5.63	
4,785.0	37.00	356.20	4,740.3	218.0	20.9	217.7	5.21	5.00	-2.50	
4,816.0	39.60	356.70	4,764.6	237.2	19.7	236.9	8.45	8.39	1.61	
4,848.0	41.20	358.20	4,789.0	257.9	18.8	257.7	5.85	5.00	4.69	
4,880.0	43.10	359.30	4,812.7	279.4	18.3	279.1	6.37	5.94	3.44	
4,911.0	44.40	359.80	4,835.1	300.8	18.2	300.6	4.34	4.19	1.61	
4,943.0	47.70	0.00	4,857.3	323.9	18.1	323.6	10.32	10.31	0.63	
4,975.0	50.20	358.60	4,878.3	348.0	17.8	347.7	8.48	7.81	-4.38	
5,007.0	50.70	356.60	4,898.7	372.6	16.8	372.4	5.07	1.56	-6.25	

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Survey Report

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Site:	Sec 34-T33S-R17W	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Well:	Carlisle 3317 2-27H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,038.0	50.10	356.20	4,918.5	396.5	15.3	396.2	2.18	-1.94	-1.29
5,070.0	50.10	356.30	4,939.0	421.0	13.7	420.8	0.24	0.00	0.31
5,102.0	49.40	356.00	4,959.7	445.3	12.0	445.1	2.30	-2.19	-0.94
5,134.0	49.80	355.50	4,980.4	469.6	10.2	469.5	1.73	1.25	-1.56
5,165.0	51.30	355.40	5,000.1	493.5	8.3	493.4	4.85	4.84	-0.32
5,197.0	52.50	354.80	5,019.8	518.6	6.2	518.5	4.03	3.75	-1.88
5,229.0	55.40	354.90	5,038.7	544.4	3.9	544.3	9.07	9.06	0.31
5,261.0	57.90	355.80	5,056.3	571.0	1.7	570.9	8.16	7.81	2.81
5,293.0	61.20	357.40	5,072.5	598.5	0.1	598.5	11.18	10.31	5.00
5,324.0	64.60	358.30	5,086.6	626.1	-1.0	626.1	11.27	10.97	2.90
5,356.0	68.00	359.00	5,099.5	655.4	-1.7	655.4	10.81	10.63	2.19
5,388.0	71.90	359.30	5,110.4	685.4	-2.1	685.4	12.22	12.19	0.94
5,419.0	75.00	359.40	5,119.3	715.2	-2.4	715.1	10.00	10.00	0.32
5,451.0	77.30	359.20	5,126.9	746.2	-2.8	746.2	7.21	7.19	-0.63
5,483.0	80.70	357.90	5,133.0	777.6	-3.6	777.6	11.35	10.63	-4.06
5,514.0	83.70	357.80	5,137.2	808.3	-4.8	808.3	9.68	9.68	-0.32
5,546.0	86.80	358.20	5,139.9	840.2	-5.9	840.2	9.77	9.69	1.25
5,614.0	90.70	359.20	5,141.4	908.1	-7.4	908.1	5.92	5.74	1.47
5,674.0	90.90	0.50	5,140.5	968.1	-7.6	968.1	2.19	0.33	2.17
5,765.0	88.50	2.60	5,141.0	1,059.1	-5.1	1,059.0	3.50	-2.64	2.31
5,856.0	86.00	2.40	5,145.4	1,149.9	-1.2	1,149.8	2.76	-2.75	-0.22
5,948.0	85.10	0.00	5,152.5	1,241.6	0.8	1,241.5	2.78	-0.98	-2.61
6,040.0	86.20	357.90	5,159.5	1,333.3	-0.9	1,333.2	2.57	1.20	-2.28
6,132.0	87.60	356.20	5,164.5	1,425.0	-5.6	1,425.0	2.39	1.52	-1.85
6,223.0	88.20	355.90	5,167.8	1,515.7	-11.9	1,515.8	0.74	0.66	-0.33
6,315.0	88.90	354.90	5,170.1	1,607.4	-19.3	1,607.5	1.33	0.76	-1.09
6,407.0	89.90	354.60	5,171.1	1,699.0	-27.7	1,699.2	1.13	1.09	-0.33
6,498.0	92.10	355.90	5,169.5	1,789.7	-35.2	1,790.0	2.81	2.42	1.43
6,591.0	93.90	357.40	5,164.6	1,882.4	-40.7	1,882.8	2.52	1.94	1.61
6,683.0	91.30	359.40	5,160.5	1,974.2	-43.2	1,974.6	3.56	-2.83	2.17
6,775.0	89.00	1.70	5,160.2	2,066.2	-42.3	2,066.6	3.54	-2.50	2.50
6,867.0	88.90	0.70	5,161.9	2,158.2	-40.4	2,158.5	1.09	-0.11	-1.09
6,963.0	89.50	0.70	5,163.2	2,254.2	-39.2	2,254.5	0.63	0.63	0.00
7,058.0	90.20	0.50	5,163.5	2,349.2	-38.3	2,349.5	0.77	0.74	-0.21
7,153.0	89.20	1.10	5,164.0	2,444.2	-36.9	2,444.4	1.23	-1.05	0.63
7,249.0	89.80	1.10	5,164.8	2,540.1	-35.1	2,540.4	0.63	0.63	0.00
7,345.0	88.70	1.80	5,166.1	2,636.1	-32.7	2,636.3	1.36	-1.15	0.73
7,440.0	89.60	1.40	5,167.5	2,731.0	-30.0	2,731.2	1.04	0.95	-0.42
7,536.0	88.70	1.60	5,168.9	2,827.0	-27.5	2,827.1	0.96	-0.94	0.21
7,631.0	88.10	359.50	5,171.6	2,922.0	-26.6	2,922.1	2.30	-0.63	-2.21
7,727.0	88.70	359.10	5,174.3	3,017.9	-27.7	3,018.0	0.75	0.63	-0.42
7,822.0	89.60	358.10	5,175.7	3,112.9	-30.1	3,113.0	1.42	0.95	-1.05
7,918.0	90.20	356.70	5,175.8	3,208.8	-34.4	3,208.9	1.59	0.63	-1.46
8,013.0	90.30	355.90	5,175.4	3,303.6	-40.6	3,303.8	0.85	0.11	-0.84
8,109.0	87.20	353.00	5,177.5	3,399.1	-49.8	3,399.4	4.42	-3.23	-3.02
8,205.0	88.50	356.20	5,181.1	3,494.6	-58.9	3,495.0	3.60	1.35	3.33
8,300.0	89.20	357.20	5,183.0	3,589.4	-64.3	3,589.9	1.28	0.74	1.05
8,396.0	90.20	357.10	5,183.5	3,685.3	-69.1	3,685.8	1.05	1.04	-0.10
8,492.0	90.40	357.10	5,183.0	3,781.1	-74.0	3,781.8	0.21	0.21	0.00
8,587.0	90.80	358.10	5,182.0	3,876.1	-77.9	3,876.7	1.13	0.42	1.05
8,683.0	91.50	0.50	5,180.1	3,972.0	-79.1	3,972.7	2.60	0.73	2.50
8,778.0	93.20	0.60	5,176.2	4,066.9	-78.2	4,067.6	1.79	1.79	0.11
8,874.0	93.10	359.80	5,170.9	4,162.8	-77.9	4,163.4	0.84	-0.10	-0.83
8,970.0	93.10	359.50	5,165.7	4,258.6	-78.4	4,259.3	0.31	0.00	-0.31

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Site: Sec 34-T33S-R17W	MD Reference: WELL @ 0.0ft (Original Well Elev)
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Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,065.0	93.00	359.80	5,160.7	4,353.5	-79.0	4,354.2	0.33	-0.11	0.32	
9,161.0	91.00	356.50	5,157.3	4,449.4	-82.1	4,450.1	4.02	-2.08	-3.44	
9,256.0	89.90	353.60	5,156.6	4,544.0	-90.3	4,544.8	3.26	-1.16	-3.05	
9,351.0	89.10	352.80	5,157.4	4,638.3	-101.6	4,639.3	1.19	-0.84	-0.84	
9,447.0	86.40	352.00	5,161.2	4,733.4	-114.3	4,734.5	2.93	-2.81	-0.83	
9,543.0	89.30	351.30	5,164.8	4,828.3	-128.2	4,829.6	3.11	3.02	-0.73	
9,639.0	93.80	351.30	5,162.2	4,923.2	-142.7	4,924.6	4.69	4.69	0.00	
9,734.0	92.90	353.60	5,156.6	5,017.2	-155.2	5,018.7	2.60	-0.95	2.42	
9,812.0	92.30	355.40	5,153.1	5,094.7	-162.6	5,096.4	2.43	-0.77	2.31	
Last MWD Survey										
9,854.1	92.30	355.40	5,151.4	5,136.7	-166.0	5,138.4	0.00	0.00	0.00	
Carlisle 3317 2-27H PBHL										
9,862.0	92.30	355.40	5,151.1	5,144.5	-166.6	5,146.2	0.00	0.00	0.00	
Proj to TD										

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,041.0	1,040.9	4.2	11.0	First MWD Survey
9,812.0	5,153.1	5,094.7	-162.6	Last MWD Survey
9,862.0	5,151.1	5,144.5	-166.6	Proj to TD

Checked By: _____ Approved By: _____ Date: _____